INDEX

FLUID DYNAMICS

Volume 5, Numbers 1-6, 1970

FLUID DYNAMICS

Volume 5, Numbers 1-6, 1970

(A translation of Izvestiya Akademii Nauk SSSR — Mekhanika Zhidkosti i Gaza)

A

Abramov, Yu. Yu. - 193
Akatnov, N. L. - 965
Aleksandrov, V. V. - 531
Alievskii, M. Ya. - 758
Ankudinov, A. L. - 388
Antonets, A. V. - 324
Apshtein, E. Z. - 133
Arutyunyan, G. M. - 992
Avduevskii, V. S. - 409, 888, 1001
Avleeva, V. Kh. - 339

B

Bakum, B. I. - 696
Bam-Zelikovich, G. M. - 267, 567
Baranaev, M. K. - 492
Baranov, V. B. - 181, 897
Barmin, A. A. - 359
Barshai, M. M. - 987
Belotserkovskii, S. M. - 252, 812, 826
Belov, I. A. - 973
Berkovskii, B. M. - 297
Bernadiner, M. G. - 315, 1044
Biibosunov - 609, 780
Blinova, L. P. - 107
Branover, G. G. - 205
Brengauz, V. D. - 1
Bronshtén, V. A. - 996
Brushlinskii, K. V. - 737
Buevich, Yu. A. - 73, 271
Burdé, G. I. - 344

C

Chaikin, V. I. - 477
Cheremisin, F. G. - 527, 877
Cherkesov, L. V. - 643
Chernous'ko, F. L. - 91
Chernykh, V. A. - 310
Chudov, L. A. - 1033
Chushkin, P. I. - 329

D

Dem'yanov, Yu. A. - 14
Dombrovskaya, T. N. - 696
Dorot, V. L. - 448
Drozdov, S. A. - 581
Dzhaugashtin, K. E. - 424

E

Efimova, L. G. - 133
El'kin, L. I. - 14
Entov, V. M. - 315
Eroshin, V. A. - 517
Evdokimova, O. A. - 1035

F

Fal'kovich, S. V. - 242, 940
Favorskaya, I. K. - 872
Fedosenko, V. S. - 643
Feoktistov, V. V. - 868
Fridlender, O. G. - 364
Frishman, F. A. - 333
Frolov, A. A. - 572
Frolov, L. G. - 161

G

Galanova, Z. G. - 688
Galiev, Sh. U. - 223
Galkin, V. S. - 364
Gataullin, I. G. - 820
Gel'fgat, Yu. M. - 205
Gershbein, É. A. - 56, 957
Gilinskii, S. M. - 119
Gladush, G. G. - 193
Gogosov, V. V. - 713
Gol'dshtik, M. A. - 863
Golovachev, Yu. P. - 41
Golovin, A. M. - 458, 637
Golubinskii, A. I. - 99
Goman, O. G. - 587
Gonor, A. L. - 394
Gorshkov, A. G. - 978
Gretsov, V. K. - 1001
Grigolyuk, É. I. - 978
Grin', V. T. - 544
Gubchik, A. A. - 156
Gubin, V. E. - 504

I

Ievlev, V. M. - 80
Il'gamov, M. A. - 223
Ioselevich, V. A. - 289
Isaev, S. P. - 20
Ivanov, A. V. - 409
Ivanov, M. Ya. - 500, 544
Ivanov, N. N. - 691
Ivanov, V. T. - 1039
Ivanov, Yu. A. - 433
Ivchenko, I. N. - 355

K

Kalashnikov, V. N. - 176
Karpman, I. M. - 409
Kartalev, M. D. - 897
Karyakin, V. E. - 485
Karybekov, N. - 780
Kashko, A. V. - 514
Katskova, O. N. - 329
Kazandzhan, E. P. - 156
Keller, B. S. - 415
Kel'manson, I. A. - 684
Khapilova, V. S. - 179
Khaziev, N. N. - 504
Khozhainov, A. I. - 201
Khramov, N. E. - 444
Kireev, V. I. - 947
Kirnasov, B. S. - 614
Kiselev, O. M. - 833
Kit, L. G. - 205
Kogan, M. N. - 99, 364
Kolesnikova, L. M. - 161
Korobko, V. I. - 242
Korovin, V. M. - 713
Korsun, A. G. - 920
Kosorukov, A. L. - 33
Kostryukova, E. D. - 688
Kovner, D. S. - 7

Kozhin, V. N. - 107, 800
Kozlova, I. G. - 982
Kraiko, A. N. - 403, 544
Krasheninnikov, S. Yu. - 66, 433
Krasnobaev, K. V. - 187
Kudryavtsev, V. V. - 614
Kulikovskii, A. G. - 734
Kurzin, V. B. - 785
Kuznetsov, A. P. - 965
Kuznetsov, O. M. - 868

L

Laats, M. K. - 333
Ladikov, Yu. N. - 465
Lagutin, V. I. - 696, 882
Lapin, Yu. V. - 448
Lazarev, V. A. - 112
Lebedev, M. G. - 598
Levchuk, D. G. - 882
Levich, A. L. - 920
Lifshits, Yu. B. - 947
Lunev, V. V. - 444
Lun'kin, Yu. P. - 41
Lushchik, V. G. - 7
Lyubimov, A. N. - 164

M

Magomedov, K. M. - 213
Maksimov, V. M. - 843
Malov, Yu. I. - 752
Mal'tsev, A. I. - 951
Martinson- L. K. - 752
Mazur, V. Yu. - 969
Medvedev, K. I. - 888
Mendel'son, M. M. - 851
Meshkov, E. E. - 554
Mikhailov, V. N. - 128
Mikhailov, V. V. - 806, 982
Mnatsakanyan, A. Kh. - 667
Molokovich, Yu. M. - 857
Morozov, A. I. - 737
Morozov, M. G. - 1005
Mozzhilkin, V. V. - 770, 940
Muftakhov, A. Zh. - 699
Murzinov, I. N. - 440
Myshenkov, V. I. - 236

N

Neiland, V. Ya. - 372, 559
Nezgada, V. Yu. - 656
Nikitin, A. K. - 179
Nitusov, V. V. - 507
Nogotov, E. F. - 297

O

Ostepenko, N. A. - 394

P

Pak, V. V. - 1009
Palatnik, I. B. - 684
Paleichik, V. V. - 737
Pashatskii, N. V. - 682
Pashinina, L. V. - 511
Pavlov, K. B. - 752
Petrov, A. G. - 637
Pirumov, U. G. - 46, 593
Polezhaev, V. I. - 621
Polyanskii, M. N. - 888
Popel, A. S. - 171
Popov, S. G. - 868
Popytalov, S. A. - 252
Pribylov, V. N. - 911
Pronina, M. A. - 1033

R

Raiskii, Yu. D. - 176
Regirer, S. A. - 741
Romishevskii, E. A. - 933
Rostovtsev, D. M. - 522
Rychkov, A. D. - 892
Rysev, O. V. - 886, 927
Ryskulov, A. - 609

S

Sadovskii, V. S. - 1013
Sadykov, A. V. - 223
Sagalakov, A. M. - 904
Sagalovich, V. N. - 688
Salokhin, V. F. - 581
Samoilovich, G. S. - 507
Sapozhnikov, V. A. - 863
Savinov, K. G. - 789
Sekundov, A. N. - 66, 1026
Shapiro, E. G. - 140
Shaskin, V. M. - 454
Shifrin, É. G. - 1023
Shkadov, V. Ya. - 473
Shmanenkov, V. N. - 161, 822, 1023
Shtern, V. N. - 863
Shub, L. I. - 973
Shuvanov, N. I. - 454
Shvets, A. I. - 20, 319
Shvidler, M. I. - 851
Sipenkov, I. E. - 485
Skvortsov, É. V. - 857
Smirnov, V. I. - 259
Snegova, N. P. - 1018
Sokolov, V. G. - 651
Stepanov, G. Yu. - 708
Stolbetsov, V. I. - 820
Strelets, M. Kh. - 448
Stulov, V. P. - 140
Sukhorukikh, V. S. - 156
Syromyatnikov, N. N. - 682
Szablewski, W. - 277

T

Taganov, G. I. - 703, 1013
Tagirov, R. K. - 403
Tarunin, E. L. - 628
Telenin, G. F. - 598
Tenyakov, V. I. - 492
Tkalenko, R. A. - 775
Traskovskii, V. D. - 409
Tsabek, L. K. - 795
Tsinober, A. B. - 205
Tunkel, L. E. - 176
Turchak, L. I. - 231

U

Utkin, A. I. - 128
Varapaev, V. N. - 633
Vasenin, I. M. - 892
Vasetskaya, N. G. - 289
Vasil'ev, M. M. - 26
Vatazhin, A. B. - 726
Vertushkin, V. K. - 933
Voinov, O. V. - 458
Voloshchuk, V. M. - 304
Voronkin, V. G. - 147, 1021
Vulis, L. A. - 684

Y

Yaglom, A. M. - 415
Yagodkin, V. I. - 633
Yakimov, Yu. L. - 350
Yakovlevskii, O. V. - 1026
Yakubenko, A. E. - 748
Yakubov, I. T. - 667
Yakushin, V. I. - 660
Yalamov, Yu. I. - 355
Yudelovich, M. Ya. - 409

Z

Zablotskii, N. D. - 485
Zaitsev, S. G. - 872
Zavarzina, I. F. - 662
Zemlyanskii, B. A. - 151, 382
Zhelesnyak, M. B. - 667
Zimin, V. D. - 1035

FLUID DYNAMICS

Volume 5, Numbers 1-6, 1970

(A translation of Izvestiya Akademii Nauk SSSR—Mekhanika Zhidkosti i Gaza)

Volume 5, Number 1 January-February, 1970

	Eng.	Russ.
Propagation of Magnetosonic Waves in a Nonuniform Isothermal Atmosphere—V. D. Brengauz	1	3
Turbulent Flow of a Conducting Liquid in a Longitudinal Magnetic Field—D. S. Kovner and V. G. Lushchik	7	10
Effect of Initial Phase of Shock Wave Reflection from a Wall on Establishment of Flow and Heat Transfer Processes—Yu. A. Dem'yanov and L. I. El'kin	14	18
Base Flow at Supersonic Velocities—S. P. Isaev and A. I. Shvets	20	25
Supersonic Gas Flow Past a Cone at Angle of Attack—M. M. Vasil'ev	26	33
Blunt Body Flow with Account for Nonequilibrium Excitation of the Vibrational Degrees of Freedom—A. L. Kosorukov	33	40
Vibrational-Dissociational Relaxation in Airflow behind a Normal Shock Wave—Yu. P. Golovachev and Yu. P. Lun'kin	41	48
Study of Flow in Subsonic and Transonic Regions of a Laval Nozzle—U. G. Pirumov	46	53
Laminar Multicomponent Boundary Layer with Large Injection—E. A. Gershbein	56	64
Connection between Coefficient of Diffusion and Eulerian Turbulence Characteristics in Various Flows—S. Yu. Krasheninnikov and A. N. Sekundov	66	74
Interaction of a Stokes Particle with a Random Turbulent Incompressible Fluid Field—Yu. A. Buevich	73	83
Approximate Equations of Turbulent Incompressible Fluid Flow—V. M. Ievlev	80	91
Motion of a Liquid Bounded by a Flexible Film—F. L. Chernous'ko	91	104
Impulse of the Unsteady Pressure Acting on Bodies in a Liquid or Gas—A. I. Golubinskii and M. N. Kogan	99	113
Radiation of a Cylinder Oscillating in a Viscous Medium—L. P. Blinova and V. N. Kozhin	107	121
Cavitating Flow of Finite-Width Jet Past a Flat Plate—V. A. Lazarev	112	127
Sphere Motion in a Combustible Gas Mixture—S. M. Gilinskii	119	134
Application of the Volterra Method to the Solution of Mixed Wave Equation Problems—V. N. Mikhailov and A. I. Utkin	128	143
Radiative Transport within an Ablating Body—E. Z. Apshtein and L. G. Efimova	133	148
Shock Layer Radiation in Hypersonic Airflow Past Blunt Bodies—V. P. Stulov and E. G. Shapiro	140	154
Pressure Distribution on Blunted Cones in Nonequilibrium Flow—V. G. Voronkin	147	161
Stagnation Point Location for Three-Dimensional Hypersonic Flow Past Segmental Bodies—B. A. Zemlyanskii	151	164
Detection of Strong and Weak Discontinuity Surfaces in Gasdynamic Flows from Optical Experiment Data—A. A. Gubchik, E. P. Kazandzhan, and V. S. Sukhorukikh	156	169
Similar Solutions of the Boundary Layer Equations for a Slender Body of Revolution in the Presence of a Positive Pressure Gradient—L. M. Kolesnikova, L. G. Frolov, and V. N. Shmanenkov	161	173
The Value of the Entropy at the Surface of Paraboloids—A. N. Lyubimov	164	176
Disk Oscillations in a Fluid with Intrinsic Angular Momentum—A. S. Popel	171	181

Reverse Flow of Swirling Fluid in a Tube—V. N. Kalashnikov, Yu. D. Raiskii, and L. E. Tunkel. 176 185
Letter to the Editor—V. S. Khapilova and A. K. Nikitin 179 192

Volume 5, Number 2 March-April, 1970

Simple Waves in a Plasma with Anisotropic Pressure—V. B. Baranov 181 6
Ionization of a Gas by Instantaneously Flaring Radiation—K. V. Krashnobaev 187 14
Rarefied Gas Flow near a Nonuniformly Heated Surface—Yu. Yu. Abramov and G. G. Gladush 193 20
Unsteady MHD Couette Flow due to a Change in the Applied Magnetic Field Magnitude —A. I. Khozhainov 201 30
Study of MHD Turbulence in Tubes using Conduction Anemometers—G. G. Branover, Yu. M. Gel'fgat, L. G. Kit, and A. B. Tsinober 205 35
Hypersonic Viscous Gas Flow past Blunt Bodies—K. M. Magomedov 213 45
Periodic Shock Waves in a Gas—Sh. U. Galiev, M. A. Il'gamov, and A. V. Sadykov 223 57
Supersonic Nonequilibrium Flow past Segmental Bodies of a Mixture Simulating the Atmosphere of Venus—L. I. Turchak 231 67
Subsonic and Transsonic Viscous Gas Flow in the Wake of a Two-Dimensional Body —V. I. Myshenkov 236 73
Nonself-Similar Problems of Jet Flow Theory—V. I. Korobko and S. V. Fal'kovich 242 80
Action of a Gust on a Wing with Subsonic Leading and Trailing Edges —S. M. Belotserkovskii and S. A. Popytalov 252 92
Equations for Isotropic Turbulent-Flow Space—Time Correlation Functions —V. I. Smirnov 259 101
Necessary Condition for Three-Dimensional Boundary Layer Separation —G. M. Bam-Zelikovich 267 109
Drag Reduction Model for Particle Injection into a Turbulent Viscous Fluid Stream —Yu. A. Buevich 271 114
New Approach to the Calculation of Incompressible Turbulent Boundary Layers —W. Szablewski 277 121
Semiempirical Turbulence Theory for Dilute Polymer Solutions—N. G. Vasetskaya and V. A. Ioselevich 289 136
Numerical Study of Free Convection with Heating from Above—B. M. Berkovskii and E. F. Nogotov 297 147
Approximate Solution of the Fokker—Planck Equation for Aerosol Particles —V. M. Voloshchuk 304 155
Nonlinear Elastic Filtration Regime in Viscoelastic Porous Medium—V. A. Chernykh . . 310 163
Some Exact Solutions of Plane Filtration Problems with Limiting Gradient —M. G. Bernadiner and V. M. Entov 315 168
Flow Past an Oblate Ellipsoid of Revolution Aligned along the Major Axis —A. I. Shvets 319 173
Three-Dimensional Supersonic Flow past Blunt Bodies with Contour Discontinuities, with Account for Equilibrium and Frozen State of the Gas in the Shock Layer —A. V. Antonets 324 178
Effect of Nonequilibrium Dissociation on Supersonic Three-Dimensional Flow past Inverted Cones—O. N. Katskova and P. I. Chushkin 329 182
Assumptions Used in Calculating the Two-Phase Jet—M. K. Laats and F. A. Frishman . . 333 186
Experimental Study of Heat Transfer of a Sphere and a Flat Plate in Supersonic Rarefied Gas Flow—V. Kh. Avleeva 339 191
Numerical Study of the Onset of Convection in a Modulated External Force Field —G. I. Burdé 344 196

	Eng.	Russ.
Motion of a Cylinder in Arbitrary Planar Ideal Incompressible Fluid Flow – Yu. L. Yakimov	350	202

Volume 5, Number 3 May-June, 1970

Thermophoresis of Aerosol Particles in the Nearly Free Molecular Regime – I. N. Ivchenko and Yu. I. Yalamov	355	3
Recombination Fronts for Arbitrary Magnetic Field Orientation – A. A. Barmin	359	8
Some Kinetic Effects in Continuum Flows – V. S. Galkin, M. N. Kogan, and O. G. Fridlender	364	13
Asymptotic Theory of Plane Steady Supersonic Flows with Separation Zones – V. Ya. Neiland	372	22
On Hypersonic Flow Past Conical Segment Bodies at Large Angle of Attack – B. A. Zemlyanskii	382	33
Calculation of Viscous Hypersonic Shock Layer with Mass Injection for Moderately Small Reynolds Numbers – A. L. Ankudinov	388	40
Hypersonic Flow Past Delta Wing of Finite Thickness – A. L. Gonor and N. A. Ostepenko	394	46
Optimal Two-Dimensional Afterbody at Supersonic Speeds – A. N. Kraiko and R. K. Tagirov	403	56
Flow in Supersonic Viscous Underexpanded Jet – V. S. Avduevskii, A. V. Ivanov, I. M. Karpman, V. D. Traskovskii, and M. Ya. Yudelovich	409	63
Effect of Energy Dissipation Fluctuations on Form of Turbulence Spectrum in Extreme Shortwave Region – B. S. Keller and A. M. Yaglom	415	70
Pulsative Energy Balance in Free Turbulent Incompressible Fluid Jets – K. E. Dzhaugashtin	424	80
Determining Turbulence Characteristics by Diffusion Measurements – Yu. A. Ivanov and S. Yu. Krasheninnikov	433	90
Determining Enthalpy in Stagnant Flow Regions – I. N. Murzinov	440	97
Flow in Vicinity of Blunt Body Stagnation Point in Diverging Hypersonic Stream – V. V. Lunev and N. E. Khramov	444	102
Combustion in Turbulent Boundary Layer on a Porous Surface – V. L. Dorot, Yu. V. Lapin, and M. Kh. Strelets	448	106
Equilibrium Form of Free Liquid Surface in Gravity and Magnetic Fields with Account for Surface Tension Forces – V. M. Shashin and N. I. Shuvanov	454	113
Lagrange Equations for a System of Bubbles of Varying Radii in a Liquid of Small Viscosity – O. V. Voinov and A. M. Golovin	458	117
Stability of Liquid Flowing Down Inclined Phase-Transition Surface – Yu. N. Ladikov	465	124
Wave Formation on Surface of Viscous Liquid Due to Tangential Stress – V. Ya. Shkadov	473	133
Axisymmetric Jet Flow from Vessel with Conical Bottom – V. I. Chaikin	477	138
Spherical Gas Slider Bearing with Forced Pressurization – N. D. Zablotskii, V. E. Karyakin, and I. E. Sipenkov	485	147
Centrifugal Injector Droplet Size over a Wide Range of Dispersant Properties – M. K. Baranaev and V. I. Tenyakov	492	155
Calculation of Gas Flow in Shock Tube of Variable Section – M. Ya. Ivanov	500	162
Thermosolutal Convection – V. E. Gubin and N. N. Khaziev	504	166
Calculation of Flow Past Cascade of Arbitrary Profiles Vibrating with Arbitrary Phase Shift and with Account for Profile Displacement – V. V. Nitusov and G. S. Samoilovich	507	170
Stability of Liquid Flow Along the Wall of a Vertical Tube under the Action of Tangential Stress – L. V. Pashinina	511	173
Flow Oscillations in Wakes behind Disks and a Sphere – A. V. Kashko	514	176
Thrust Development during Motion of a Deformable Profile – V. A. Eroshin	517	179

Eng./Russ.

Impact on Elastic Contour Floating on the Surface of an Incompressible Liquid — D. M. Rostovtsev 522 183

Volume 5, Number 4 July-August, 1970

Verification of the Nature of the Approximation of the Boltzmann Integral by Krook's Kinetic Relaxation Model — F. G. Cheremisin 527 3
One Class of Self-Similar Flows of a Radiating Gas — V. V. Aleksandrov 531 8
Investigation of the Dynamics of the Stagnation Flow of an Ideal Gas with a Rear Shock Wave — V. T. Grin', M. Ya. Ivanov, and A. N. Kraiko 544 23
Reflection of a Plane Shock Wave from a Rigid Concave Wall — E. E. Meshkov. 554 33
Propagation of Perturbations Upstream with Interaction between a Hypersonic Flow and a Boundary Layer — V. Ya. Neiland. 559 40
Criteria for the Detachment of a Three-Dimensional Boundary Layer — G. M. Bam-Zelikovich 567 50
Blowing Coefficient with Arbitrary Variation of the Mass Flow Rate of the Blown Gas Past a Body around Which Flows a Stream with an Exponential Change in the Velocity — A. A. Frolov. 572 55
An Unsteady-State Thermal Boundary Layer on a Flat Isothermal Plate — S. A. Drozdov and V. F. Salokhin 581 64
Accelerated Supersonic Motion of a Plate with a Finite Angle of Attack — O. G. Goman. 587 70
Two-Layer Flows of Gas in Supersonic Axisymmetric Nozzles — U. G. Pirumov 593 76
Interaction between a Supersonic Jet and an Acoustic Field — M. G. Lebedev and G. F. Telenin. 598 82
Plane-Parallel Supersonic Flow with a Discontinuity — I. Biibosunov and A. Ryskulov. . 609 95
Subsonic Flow of a Compressible Gas around a Semiinfinite Flat Plate in a Pipe — B. S. Kirnasov and V. V. Kudryavtsev 614 101
Nonstationary Laminar Heat Convection in a Closed Domain for a Given Heat Flux — V. I. Polezhaev 621 109
Nonsteady-State Thermal Convection in a Spherical Cavity — E. L. Tarunin. 628 118
On the Stability of Certain Nonparallel Flows of a Viscous Incompressible Liquid in a Channel — V. N. Varapaev and V. I. Yagodkin 633 125
Spectrum of Coalescing Bubbles in a Low-Viscosity Fluid — A. M. Golovin and A. G. Petrov 637 130
Development of Ship Waves in a Nonhomogeneous Liquid — V. S. Fedosenko and L. V. Cherkesov. 643 137
Heat Transfer in a Thin Layer of a Viscous Heavy Noncompressible Liquid under Wavy Flow Conditions — V. G. Sokolov 651 147
Effect of the Temperature of the Atomized Water on the Kinetics of the Decomposition of a Jet — V. Yu. Nezgada. 656 151
Instability of the Motion of a Liquid between Two Rotating Spherical Surfaces — V. I. Yakushin 660 155
Experimental Investigations of Local Heat Fluxes on a Sphere and on the Spherical Blunt End of an Axisymmetric Body — I. F. Zavarzina. 662 157
Relaxation and Nonequilibrium Radiation behind Shock Waves in Air — M. B. Zhelesnyak, A. Kh. Mnatsakanyan, and I. T. Yakubov 667 161
Dependence of the Stagnation Temperature of a Jet of Gas Containing Solid Particles on the Concentration of Particles and Their Velocity — N. V. Pashatskii and N. N. Syromyatnikov 682 175
Investigation of the Flow Structure in a Plane Turbulent Jet — L. A. Vulis, I. A. Kel'manson, and I. B. Palatnik 684 176

Eng./Russ.

On the Interaction of an Air Flow with a Transverse Gas Jet Flowing Out from an Aperture in a Plate – Z. G. Galanova, E. D. Kostryukova, and V. N. Sagalovich 688 180
Acoustic Effect on the Root Part of a Turbulent Jet – N. N. Ivanov. 691 182
Effect of Dust Content of the Flow on Test Results in Hypersonic Wind Tunnels – B. I. Bakum, T. N. Dombrovskaya, and V. I. Lagutin 696 187
Seepage of Subsurface Water Toward Bilinear Horizontal Drains in Two-Layer Aquifers with a Free Surface – A. Zh. Muftakhov 699 189
Remarks of G. Yu. Stepanov on the Article "The Theory of Steady-State Breakaway Zones," by G. I. Taganov – G. I. Taganov 703 193

CHRONICLES
Jubilee Scientific Session of the General Meeting of the Division of Mechanics and Control Processes of the Academy of Sciences of the USSR, Dedicated to the 100-th Anniversary of the Birthday of V. I. Lenin – G. Yu. Stepanov 708 197

Volume 5, Number 5 September-October, 1970

Solution of the Boundary-Layer Equations at the Electrodes in a Completely Ionized Plasma with Different Temperatures of the Components – V. V. Gogosov and V. M. Korovin 713 3
Unsteady-State Flow of a Gas in a Channel, Resulting from the Motion of a Piston, with Magnetohydrodynamic Offtake of Energy and Luminescence of the Gas – A. B. Vatazhin 726 17
Stability of a Homogeneous Plasma Confined between Two Parallel Planes – A. G. Kulikovskii 734 26
Calculation of a Quasi-One-Dimensional Flow of a Gas Undergoing Ionization in a Nozzle – K. V. Brushlinskii, A. I. Morozov, and V. V. Paleichik 737 29
Approximate Solution of the Problem of the Flow of a Conducting Liquid in a Duct with Rectangular Cross Section – S. A. Regirer 741 33
Calculation of the Flow of an Electrically Conducting Liquid in a Duct of Rectangular Cross Section with Electrodes – A. E. Yakubenko. 748 41
Stationary Flow of a Conducting Liquid in a Rectangular Channel with Two Nonconducting Walls and Two Walls Having an Arbitrary Conductivity Parallel to an External Magnetic Field – Yu. I. Malov, L. K. Martinson, and K. B. Pavlov 752 46
Relaxation, Propagation of Sound, and Transfer Processes in Molecular Gases – M. Ya. Alievskii 758 53
Motion of a Shock Wave through a Gas of Variable Density – V. V. Mozzhilkin 770 68
On Spontaneous Condensation in Supersonic Flow around an Obtuse Angle – R. A. Tkalenko 775 73
Plane Transonic Flow by a Curved Compression Shock – I. Biibosunov and N. Karybekov 780 78
The Damped Natural Oscillations of a Gas Flowing past a Cascade of Flat Plates – V. B. Kurzin 785 84
Flow past a Sphere of Two Co-axial Supersonic Streams – K. G. Savinov. 789 89
Motion of a Gas Mixture through a Porous Medium with Sorption – L. K. Tsabek 795 95
Radiation of Waves by a Sphere Harmonically Oscillating to-and-fro in a Viscous Medium – V. N. Kozhin 800 101
Second Approximation in the Problem of the Strong Viscous Interaction on Slender Three-Dimensional Bodies – V. V. Mikhailov 806 107
A Nonlinear Problem Concerning the Collision of Two-Dimensional Jets of an Ideal Incompressible Fluid with a Flow Discontinuity on the Boundary between the Jets – P. M. Belotserkovskii 812 114

Eng./Russ.

On the Determination of Nonlinear Oscillations of a Liquid in a Circular Cylinder Sector – I. G. Gataullin and V. I. Stolbetsov 820 124
On the Reversibility Theorem for a Wing with Arbitrary Time Dependences – S. M. Belotserkovskii 826 132
Standing Capillary-Gravitational Waves in a Channel – O. M. Kiselev 833 140
Motion of Two Nonmixing Liquids in a Porous Layered Medium in the Presence of an Unknown Mobile Interface – V. M. Maksimov 843 151
Percolation with a Limiting Gradient in a Medium with Random Inhomogeneities – M. M. Mendel'son and M. I. Shvidler 851 159
One-Dimensional Percolation of a Fluid with a Variable Shear Gradient – Yu. M. Molokovich and É. V. Skvortsov 857 166
Verification of the Malkus Hypothesis Regarding the Stability of Turbulent Flows – M. A. Gol'dshtik, V. A. Sapozhnikov, and V. N. Shtern 863 172
Discrete Vortices in a Plane Wake at $M_\infty < 1$ and with a Nonsteady Boundary Layer on the Plane – O. M. Kuznetsov, S. G. Popov, and V. V. Feoktistov 868 176
Calculation of Shock Wave Propagation in a Magnetogasdynamic Channel – S. G. Zaitsev and I. K. Favorskaya 872 180
Solution of the Problem of Heat Transfer between Parallel Infinite Walls in a Rarefied Gas by Means of the Boltzmann Equation – F. G. Cheremisin 877 185
Experimental Investigations of a Hypersonic Flow around an Oscillating Flared Body – V. I. Lagutin, D. G. Levchuk, and V. N. Shmanenkov 882 189
Canonical Form of the Characteristic Relationships for Irrotational Axisymmetric Flows – O. V. Rysev 886 192
Interaction of a Supersonic Flow with a Transverse Jet Injected through a Circular Aperture in a Plate – V. S. Avduevskii, K. I. Medvedev, and M. N. Polyanskii . . . 888 193
Numerical Computation of an Axisymmetric Supersonic Overexpanded Jet of Ideal Gas – I. M. Vasenin and A. D. Rychkov 892 197

Volume 5, Number 6 November-December, 1970

Magnetic Hydrodynamics of Two-Dimensional Flows in a Plasma with an Anisotropic Pressure – V. B. Baranov and M. D. Kartalev 897 3
Stability of Plane Couette-Poiseuille Flow in the Presence of a Magnetic Field – A. M. Sagalakov 904 11
Motion of a Two-Temperature Plasma in the Channel of a Disc-Type Magnetohydrodynamic Generator – V. N. Pribylov 911 18
Effect of the Form of the Electrodes on the Current Distribution in a Magnetogasdynamic Channel – A. G. Korsun and A. L. Levich 920 26
Unsteady-State Rarefaction Flows with Symmetry – O. V. Rysev 927 34
Role of the Absorption of Radiation ahead of a Shock Wave with Hypersonic Flow around a Blunt Body – V. K. Vertushkin and E. A. Romishevskii 933 40
Propagation of Shock Waves in a Medium with Exponentially Varying Density – V. V. Mozzhilkin and S. V. Fal'kovich 940 48
Transonic Flow of a Gas in Axisymmetric Laval Nozzles with Steep Walls – V. I. Kireev and Yu. B. Lifshits 947 55
Experimental Determination of the Amount of Accelerated Molecular Diffusion in the Turbulent Mixing of Coflowing Supersonic Streams – A. I. Mal'tsev 951 59
Asymptotic Solution of the Equations of a Laminar Multicomponent Boundary Layer with Intensive Suction – É. A. Gershbein 957 66
Energy-Balance Equation for Turbulent Pulsations in the Theory of the Free Turbulent Boundary Layer – N. I. Akatnov and A. P. Kuznetsov 965 75
Motion of Two Circular Cylinders in an Ideal Fluid – V. Yu. Mazur 969 80
Flow of a Vortical Stream in the Neighborhood of the Critical Point – I. A. Belov and L. I. Shub 973 85

	Engl.	Russ.
Impact of a Spherical Shell on the Surface of a Liquid—A. G. Gorshkov and É. I. Grigolyuk	978	90
Strong Viscous Interaction on Triangular and Slipping Wings—I. G. Kozlova and V. V. Mikhailov	982	94
On the Nonlinear Theory of a Propeller in an Axial Regime—M. M. Barshai	987	100
Limits of Applicability of an Exact Solution of the Problem of Interaction of a Shock Wave with a Wedge Moving with Supersonic Velocity—G. M. Arutyunyan	992	104
Propagation of Strong Cylindrical Waves in an Inhomogeneous Atmosphere —V. A. Bronshtén	996	108
Investigation of the Three-Dimensional Separation Flow around Half-Cones on a Flat Plate—V. S. Avduevskii and V. K. Gretsov	1001	112
The Similarity of Supersonic Separated Zones—M. G. Morozov	1005	115
Flow past an Arbitrary Star-Shaped Contour—V. V. Pak	1009	119
Supersonic Spatial Flow Involving Heat Access and Deflection of the Airstream —V. S. Sadovskii and G. I. Taganov	1013	121
Use of the Van Driest Formula for Calculating Heat Exchange at High Prandtl Numbers —N. P. Snegova	1018	125
Influence of Freezing of Chemical Reactions on the Heat Exchange in a Nonequilibrium Laminar Boundary Layer—V. G. Voronkin	1021	127
Research on the Flow in a Jet at a Distance from the Place where It Meets an Obstacle —É. G. Shifrin and V. N. Shmanenkov	1023	129
Experimental Research on Flow in a Wake behind Thin Plates—A. N. Sekundov and O. V. Yakovlevskii	1026	131
Numerical Verification of Landau's Asymptotic Formulas for Boundary Layer Separation—M. A. Pronina and L. A. Chudov	1033	138
Natural Convection from a Thin Heated Wire Situated on the Surface of a Liquid —O. A. Evdokimova and V. D. Zimin	1035	139
Inflow of Liquid into Imperfect Wells—V. T. Ivanov	1039	142
On Limiting Configuration of Stagnation Zones in Displacement of Viscoplastic Oil by Water—M. G. Bernadiner	1044	146
INDEX		
Author Index, Volume 5, Numbers 1-6, 1970	1049	
Tables of Contents, Volume 5, Numbers 1-6, 1970	1051	